

STORM WATER POLLUTION PREVENTION PLAN FOR CONSTRUCTION ACTIVITIES (SWPPP-CA) LONG-FORM PROJECT

PROJECT TITLE: INEEL CERCLA Disposal Facility (ICDF) Stage II Construction

Facility or Location: INTEC

Environmental Checklist No.: INEL-00-018-R1

Project Description:

The Stage II Construction is the continuation of Landfill and Evaporation Pond work that was completed in September 2001. The Stage II work will use the existing sediment and erosion controls that are currently in place. The Stage II Construction work will include the construction of the leachate collection system and related piping, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) storage area, utilities, Staging and Storage Area (SSA), temporary stockpile area, final storm water diversion system, access roads, boundary fence, and necessary berms.

Project Construction Date/Duration: 1 year.

Area of Site to be disturbed: Total area within the boundary fence is approximately 55 acres.

Standard requirements:

- ☒ Post SWPPP-CA notice near main entrance of construction site.
- ☒ Spill prevention measures and prompt cleanup of any liquid or dry material spills.
- ☒ Minimize offsite tracking of sediments from vehicles.
- ☒ Minimize area of disturbance and preserve vegetation.
- ☒ Good Housekeeping procedures:
 - ☒ Proper and orderly storage of chemicals, pesticides, fertilizers, fuel, and other hazardous materials.
 - ☒ Proper and regular disposal of sanitary, construction, and hazardous wastes.
- ☒ Fugitive dust control measures.
- ☒ Perform inspections monthly, after storms, and prior to project close-out.
- ☒ Attach a site map that indicates drainage patterns, discharge locations, potential pollution sources (equipment and material storage areas including soil piles), areas of soil disturbance, erosion and sediment controls, storm water control measures, and stabilization practices.

Erosion and Sediment Controls: (Describe controls to divert storm water from exposed soil and retain sediments on-site, such as diversion structures, silt fences, and sediment basins. Identify the entities responsible for implementation and maintenance.)

The site has a relatively flat terrain and excavated material is expected to be gravelly soil. The gradual on-site drainage flow is in the northeasterly direction. Erosion and sediment controls that will be used include perimeter ditches, straw bale check dams, native vegetation, a level spreader, and a filter fence. These controls are identified in the Erosion Control Plan Drawing (EC-201). Perimeter ditches were installed during the excavation and fill placement activities. Ditches have straw bale check dams for trapping sediment, and are top-soiled, seeded, and straw mulched to control ditch erosion. A buffer zone of native vegetation will be maintained to reduce required sediment controls during excavation. Discharge of clean storm water will occur to existing drainage channels via a level spreader at the northeastern part of the site. Permanent material stockpiles will be seeded and straw mulched for erosion stabilization and dust control. If seeding and straw mulching do not provide sufficient dust control, other measures as outlined in the INEEL Storm Water Pollution Prevention Plan for Construction Activities (DOE/ID-10425 May 1998) may be considered. Temporary stockpiles will not be seeded, but will be managed to minimize erosion and deterioration of topsoil quality in accordance with the Technical Specifications (SPC-1476), Section 02316, Excavation. A filter fence will be used to intercept sediment in storm water. The subcontractor will be responsible for implementation and maintenance of erosion control measures during the construction period.

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Sequence: (Describe the sequence of major activities, control measure implementation, and control measure removal.)

Sequence of the events is outlined below:

Mobilization

Confirmation that the existing sediment and erosion control elements are functional

Mobilization of equipment

Clearing, grubbing, and stripping if needed

Excavation for liner system, leachate collection system, miscellaneous piping, utilities, and CERCLA storage area

Construction of crest pad buildings and truck loading station

Excavation and haul of borrow soil from the Rye Grass Flats Borrow area

Blending of bentonite with Rye Grass Flats material to make the compacted clay liner material

Placement of compacted clay liner in landfill area

Placement of geosynthetics in the landfill and evaporation ponds areas

Placement of drain gravel and operations layers in the landfill and evaporation pond areas

Revegetation/restoration for the Staging and Storage Area, temporary stockpile area, and temporary access roads

Asphalt paving the landfill cell access road; gravel surfacing for other site access roads

Construct the boundary fence

Performance testing

Demobilization

Other activities included in the events listed above may consist of the installation of a new culvert, ditches, and regrading areas.

Clean-up of the construction site following excavation will be conducted prior to demobilization. In addition, a perimeter fence has been erected around the excavated area to reduce the amount of wind-blown snow that will accumulate in the excavation area. Portions of this fence will be removed at the end of Stage II Title II construction.

Run-off Coefficient and Storm Water Management: (Calculate run-off coefficients and explain the technical basis for permanent storm water management measures if the coefficient after construction is greater than before.)

The pre-construction coefficient of run-off for the site was approximately 0.30. The coefficient of runoff for the construction area will have the possibility of increasing after excavation. Further details can be found in Engineering Design File (EDF)-Environmental Restoration (ER)-270, "Draft Storm Water Drainage Calculations," including information regarding the hydrological evaluation of precipitation events producing storm water run-off and recommendations for storm water infiltration area(s).

Final Stabilization: (Identify soil stabilization measures and describe scheduling. Identify the entities responsible for implementation and maintenance.)

The ICDF landfill cell is constructed below the existing grade with an above grade berm to prevent storm water run-on during excavation. "Slope Stability Assessments" (EDF-ER-268), details the calculations used to determine acceptable side slopes for the landfill including structural characteristics for the soil, and capabilities of compaction equipment. A summary of stabilization measures performed by the subcontractor is briefly discussed below:

Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased.

- Existing vegetation will be preserved where practical. While in the field, areas that are not to be disturbed will be marked, including setbacks, sensitive/critical areas, and their buffers. Drainage courses will be flagged prior to excavation.
 - Cut and fill slopes will be designed and constructed in a manner that will minimize erosion. Slopes will be stabilized.
 - Wherever construction vehicle access routes that intersect paved roads, provisions, such as the use of a gravel construction entrance, will be made to minimize the transport of mud or sediment onto the paved road. If mud or sediment still pose a problem despite the use of preventative measures, wheel washing will be considered. The use of street sweeping or vacuuming will be considered to keep roads clean, with the frequency of cleaning being left to the discretion of the construction manager.
 - Large disturbed areas (such as the Rye Grass Flats Borrow area, the temporary stockpile and staging areas, and the contractor parking area) will be regraded, topsoiled, and seeded in accordance with INEEL Standards.
 - All best management practices will be inspected, maintained, and repaired as needed to assure continued performance of their intended function. All on-site erosion and sediment control measures shall be inspected at least once every month, as required by the SWPPP, and within 24 hours after any storm event of greater than 0.5 in. of rain per 24-hour period or a rapid snow melt event.
 - Record keeping will be conducted in accordance to vendor quality assurance requirements to summarize scope of
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inspections, the personnel conducting the inspection, the dates of the inspection, and major observations relating to implementation of the SWPPP.

When completed, the facility will have an appropriate drainage collection system to accommodate a 25-year, 24-hour event in accordance with Idaho National Engineering and Environmental Laboratory design standards. The facility will incorporate the use of vegetated buffer zones, splash blocks, drainage ditches, and drainage swale. Overland flow will be collected and diverted to the northeast corner of the site. Final discharge will be through an overflow (spreader) section into existing drainage channels. The facility management will be responsible for ensuring the storm water collection and diversion system is adequately maintained.

Industrial Activities: (Identify industrial sources of pollutants such as asphalt and concrete plants and describe pollution prevention measures.)

For the construction activities of this project, there are no industrial sources of pollutants such as asphalt or concrete plants. However, spills or leaks could occur from construction equipment operating onsite. Routine maintenance and inspections of construction vehicles will be performed to inspect for leaks and implement repairs in accordance with Job Safety Analyses (JSAs), which are included in the Phase II Construction Work Control Package. Spills or leaks from construction equipment will be promptly cleaned and wastes disposed in accordance with the ICDF Construction Waste Management Plan (DOE/ID-10958).

Allowable Non-Storm Water Discharge: (Identify type of discharge and describe pollution prevention measures.)
Potential types of discharge are:

- Waters used to wash vehicles or control dust to minimize off-site sediment tracking
- Fire fighting activity discharges
- Pavement wash waters where spills or leaks of toxic or hazardous materials have not occurred and where detergents are not used.

Standard practices and systems to prevent pollution from non-storm water discharges will be implemented.

Material Inventory: (Identify construction materials and wastes.)

Construction wastes that will be generated include debris, vegetation, wood, packaging, piping, gravels, conduits, wire, geotextile and geomembrane materials. Personal protective equipment is a primary waste anticipated, and other miscellaneous wastes, such as light bulbs, batteries, metal shavings, and used parts and equipment, are also expected. Sanitary/septic wastes are also primary wastes expected to be generated during construction. These wastes will be contained and disposed appropriately according to the ICDF Construction Waste Management Plan (DOE/ID-10958). Generation of oil filters and petroleum-based waste will be minimized to the extent possible. Any oil or petroleum-based products generated can be disposed at the CFA landfill. No hazardous wastes requiring off-site disposal or treatment are expected to be generated during excavation.

Endangered Species: (Identify listed species or critical habitat in proximity to the construction activity. Describe any adverse impact and mitigative measures.)

An Ecological Evaluation for the ICDF landfill and evaporation pond was prepared and concluded that "there are no federally listed or proposed threatened or endangered species, species of special concern, or records thereof, or designated critical habitat in proximity to the project area, the area where storm water flows from the project area to the point of discharge, or in proximity to the area where storm water discharges into receiving waters." This evaluation is a part of the Environmental Checklist for the ICDF landfill and evaporation pond (INEL-00-018). The regulation governing endangered and threatened wildlife and plants is 50 CFR 17.

I have evaluated and identified controls adequate to meet the requirements of the INEEL Storm Water Pollution Prevention Plan for Construction Activities.

Project Manager

Signature

Date

Name (Please Print)

Phone Number

I am in agreement with the provisions set forth in this plan.

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FOR CONSTRUCTION ACTIVITIES (SWPPP-CA)
LONG-FORM PROJECT**

INEEL SWPPP Coordinator: _____

Date: _____

CERTIFICATION:

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____

Title: ESH&QA General Manager
For: Idaho National Engineering and Environmental Laboratory
Reference: Transfer Signature Authority Letter – PHD-34-00

Signature: _____ Date: _____

Title: Environmental Technical Support Division Director
For: DOE-Idaho Operations Office
Reference: Transfer Signature Authority Letter – OPE-EP&SA-98-091

Worksheet must be appended to the Generic Plan or Facility SWPPP-CA.

**STORM WATER POLLUTION PREVENTION PLAN
FOR CONSTRUCTION ACTIVITIES (SWPPP-CA)
LONG-FORM PROJECT**

PROJECT TITLE: INEEL CERCLA Disposal Facility (ICDF) Operation and Maintenance

Facility or Location: INTEC

Environmental Checklist No.: INEL-00-018-R1

Project Description:

The operation and maintenance of a landfill, evaporation pond, and the associated support areas such as: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) storage area, staging and storage area (SSA), temporary stockpile area, drainage ditches, drainage swale, access roads, boundary fence, and necessary berms. The site is located south of the Staging, Storage, Sizing, and Treatment Facility (SSSTF) on the southwest end of the Idaho Nuclear Technology and Engineering Center (INTEC).

Stage 2 construction of the ICDF is covered under a separate Storm Water Pollution Prevention Plan (SWPP) (attached with this plan to the ICDF Remedial Design/Construction Work Plan); a plan for the construction of the SSSTF is presented in the SSSTF Remedial Design/Construction Work Plan.)

Project Construction Date/Duration: 15-year operating life. Post-closure operation in 30 years.

Area of Site to be disturbed: Total area within the boundary fence is approximately 55 acres.

Standard requirements:

- ☒ Post SWPPP-CA notice near main entrance of construction site.
- ☒ Spill prevention measures and prompt cleanup of any liquid or dry material spills.
- ☒ Minimize offsite tracking of sediments from vehicles.
- ☒ Minimize area of disturbance and preserve vegetation.
- ☒ Good housekeeping procedures:
 - ☒ Proper and orderly storage of chemicals, pesticides, fertilizers, fuel, and other hazardous materials.
 - ☒ Proper and regular disposal of sanitary, construction, and hazardous wastes.
- ☒ Fugitive dust control measures.
- ☒ Perform inspections monthly, after storms, and prior to project close-out.
- ☒ Attach a site map that indicates drainage patterns, discharge locations, potential pollution sources (equipment and material storage areas including soil piles), areas of soil disturbance, erosion and sediment controls, storm water control measures, and stabilization practices.

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Erosion and Sediment Controls: (Describe controls to divert storm water from exposed soil and retain sediments on-site, such as diversion structures, silt fences, and sediment basins. Identify the entities responsible for implementation and maintenance.)

During operation and maintenance, the facility will have an appropriate drainage collection system to accommodate a 25-year, 24-hour event in accordance with Idaho National Engineering and Environmental Laboratory (INEEL) design standards. Since both the ICDF landfill and evaporation ponds are constructed within embankment areas, the control systems function to divert run-on around the facilities, and to collect runoff from embankment areas. The facility will incorporate the use of vegetated buffer zones, splash blocks, drainage ditches, and drainage swales. Disturbed areas from construction activities will have been stabilized using topsoil, seeding, and mulching. Overland flow will be collected and diverted to the northeast corner of the site. Final discharge will be through an overflow (spreader) section into existing drainage channels leading from the site. The drainage ditch system incorporates sediment control check dams.

Storm water that falls onto lined areas of the ICDF landfill or evaporation ponds is retained as leachate. Storm water that falls onto the unlined south slope of the ICDF Landfill Cell 1 area is collected into a storm water infiltration area located in the southwest corner of the cell. Periodic pumping of clean storm water from the infiltration pond (to the perimeter ditch system) may be necessary during the operating life of the Cell 1 area.

The facility management will be responsible for ensuring the storm water collection and diversion system is adequately maintained.

Sequence: (Describe the sequence of major activities, control measure implementation, and control measure removal.)

Maintain and monitor the facility to ensure the entire storm water collection and diversion system is working properly. During wet weather and periods when snow and ice may accumulate, facility management will inspect the storm water control system to ensure that the ditches are clear and capable of diverting storm water flows.

Runoff Coefficient and Storm Water Management: (Calculate runoff coefficients and explain the technical basis for permanent storm water management measures if the coefficient after construction is greater than before.)

The pre-construction coefficient of runoff for the site was approximately 0.30. The coefficient of runoff for the facility after excavation activities and construction will increase. Further details can be found in Engineering Design File (EDF)-Environmental Restoration (ER)-270, the "Draft Storm Water Drainage Calculations" (EDF-ER-270), including information regarding the hydrological evaluation of precipitation events producing storm water runoff and recommendations for storm water infiltration area(s).

When operating, the facility is designed to divert storm water run off away from the landfill and evaporation ponds.

Final Stabilization: (Identify soil stabilization measures and describe scheduling. Identify the entities responsible for implementation and maintenance.)

The ICDF landfill cell is below existing grade with an abovegrade berm to prevent storm water run-on during operation. "Slope Stability Assessments" (EDF-ER-268) details the calculations used to determine acceptable side slopes for the landfill including structural characteristics for the soil. A summary of stabilization measures for which the facility management is responsible is briefly discussed below:

- Stabilization measures will be initiated as soon as the facility is operational where construction activities have temporarily or permanently ceased.
- Cut and fill slopes will be designed and constructed in a manner that will minimize erosion. Permanent embankment slopes (exterior to the cell and ponds) will have been stabilized using topsoil, seeding, and mulch.
- Provisions, such as the use of a gravel or paved entrance, will be made to minimize the transport of mud or sediment onto the facility. If mud or sediment still pose a problem despite the use of preventative measures, wheel washing will be considered. The use of street sweeping or vacuuming will be considered to keep roads clean, with the frequency of cleaning being left to the discretion of the facility manager.
- All best management practices will be used to inspect, maintain, and repair conditions as needed to assure continued performance of their intended function. All on-site erosion and sediment control measures shall be inspected at the discretion of the facility management and, as required by the SWPPP, and within 24 hours after any storm event of greater than 0.5 in. of rain per 24-hour period or a rapid snow melt event. Areas of snow and ice accumulation will be inspected to ensure that erosion control measures, and storm water conveyance ditches and culverts will function properly.
- Recordkeeping will be conducted in accordance with facility management quality assurance requirements to summarize scope of inspections, the personnel conducting the inspection, the dates of the inspection, and major observations relating to implementation of the SWPPP.

When operating, the facility is designed to divert storm water run-off away from the landfill and evaporation ponds.

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Industrial Activities: (Identify industrial sources of pollutants such as asphalt and concrete plants and describe pollution prevention measures.)

During operation, the following control measures shall be in place:

- Waste hauled from the SSSTF to the ICDF cell will occur via asphalt paved road. Road will be periodically cleaned (as discussed in the previous section) as needed to control dust.
 - Waste placement operating requirements in-cell will dictate control of dust and erosion within the cell. Any storm water runoff interior to the cell on lined areas will be collected and treated as leachate. A berm along the south edge of the liner will control leachate runoff from waste areas and direct flows to the leachate collection system. A collection ditch on the outside of the runoff control berm will direct clean storm water runoff from the south unlined embankment into an infiltration area located west of the access road. This basin will require periodic maintenance to remove sediment buildup and maintain infiltration capabilities.
 - Periodic operation and maintenance traffic on gravel surfaced roads will access the crest pad buildings, truck loading station, and evaporation ponds. Dust control measures such as road watering will be utilized where necessary to control dust. Road maintenance will control erosion at the surface.
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Allowable Non-Storm Water Discharge: (Identify type of discharge and describe pollution prevention measures.)

Potential types of discharge are:

- Water used to wash vehicles
- Fire fighting activity discharges
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Standard practices and systems to prevent pollution from non-storm water discharges will be implemented.

Material Inventory: (Identify construction materials and wastes.)

None.

Endangered Species: (Identify listed species or critical habitat in proximity to the construction activity. Describe any adverse impact and mitigative measures.)

An Ecological Evaluation for the ICDF landfill and evaporation pond was prepared and concluded that "there are no federally listed or proposed threatened or endangered species, species of special concern, or records thereof, or designated critical habitat in proximity to the project area, the area where storm water flows from the project area to the point of discharge, or in proximity to the area where storm water discharges into receiving waters." This evaluation is a part of the Environmental Checklist for the ICDF landfill and evaporation pond (INEL-00-018). The regulation governing endangered and threatened wildlife and plants is 50 CFR 17.

I have evaluated and identified controls adequate to meet the requirements of the INEEL Storm Water Pollution Prevention Plan for Construction Activities.

Project Manager

Signature

Date

Name (Please Print)

Phone Number

I am in agreement with the provisions set forth in this plan.

INEEL SWPPP Coordinator:

Date:

CERTIFICATION:

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I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: _____

Title: ESH&QA General Manager
For: Idaho National Engineering and Environmental Laboratory
Reference: Transfer Signature Authority Letter – PHD-34-00

Signature: _____ Date: _____

Title: Environmental Technical Support Division Director
For: DOE-Idaho Operations Office
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